FROLOV, N.M.; AVER'YEV, V.V.; DUKHIN, I.Ye.; LYUBIMOVA, Ye.A.; Prinimali uchastiye: GOL'DBERG, V.M.; MAVRITSKIY, B.F.; SEDOV, N.V.; YAZVIN, L.S.; KUTASOV, I.M.; STARIKOVA, G.N.; KORTSENSHTEYN, V.N., red.

[Methodological instructions for studying thermal waters in boreholes.] Metodicheskie ukazaniia po izucheniiu termal'nykh vod v skvashinakh. Moskva, Nedra, 1964. 139 p. (Moskow. Vsesoiuznyi nauchno-issledovatel'skii institut gidrogeologii i inzhenernoi geologii. Trudy, no.17). (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii, Moskva (for Frolov, Gol'dberg, Mavritskiy, Sedov, Yazvin). 2. Institut vulkanologii Sibirskogo otdeleniya AN SSSR (for Aver'yev). 3. Institut merzlotovedeniya AN SSSR (for Dukhin). 4. Institut fiziki Zemli AN SSSR (for Lyubimova, Kutasov, Starikova).

ACC NR: AM7004070 Monograph UR/

Frolov, Nikolay Mikhaylovich

Temperature regime of the heliogeothermozone (Temperaturnyy rezhim geliotermozony) Moscow, "Nedra", 66. 0155 p. illus., biblio. 1,750 copies printed

TOPIC TAGS: geophysics, Earth crust, geothermicity, heliogeothermicity, temperature regime, hydrogeology, geothermics, heat flow, heliothermoze, heliogeothermozone, temperature dependence, heat transfer

PURPOSE AND COVERAGE: This is essentially a summary, discussion, and interpretation of available data on the thermal regime of that part of the Earth's crust referred to by the author as the "heliothermozone" or "heliogeothermozone", which extends approximately 200 to 1000 km below the Earth's surface. The work is based on the authors own field studies in various parts of the USSR (the Caucasus, Ciscaucasus, Kamchatka, Moldavia, Crimea, Altai, Transcarpathia, etc.) and the findings of other geologists and geophysicists. The book is intended for geologists, geophysicists, and particularly hydrogeologists. The author expresses his thanks to A. A. D'yakonov, V. M. Yakovlev, L. V. Frolova, L. B. Branopol'skiy, N. V. Sedov, V. I. Pogulya-

Card 1/3

yev and E. A. Marov who participated with him in actual geophysical explorations; I. D. Dergunov, Ye. A. Lyubimova, L. N. Lyusova, F. V. Firsov and A. L. Shushpanov of the Institute of the Physics of the Earth who contributed thermometric data; Doctor of Geological-Mineralogical Sciences F. A. Makarenko for his assistance within the administrative framework of the AN SSSR; Corresponding Member AN SSSR P. F. Shvets for advise and criticism; and V. N. Shkatunkin for participation in field work and technical assistance in preparing the manuscript for publication. The book includes 41 figures, 64 tables, 2 appendixes (temperature data), and 5 inserts (hydrothermal and geoisothermal maps, temperature tables).

TABLE OF CONTENT [abridged]:

ACC NR: AM7004070

SUB CODE: 08/ SUBM DATE: 20Dec65/ ORIG REF: 130/ OTH REF: 063

Card 3/3

AUTHOR: Frolov, N.N., Engineer SOV-99-58-8-5/11

TITLE: The Erection of Canal Dykes on Sagging Foundations by Means of Mechanized Pouring of Loess Deposits into the Water (Vozvedeniye damb kanala na prosadochnom cenovanii metodom mekhanizirovannoy otsypki lessovogo grunta v vodu)

PERIODICAL: Gidrotekhnika i melioratsiya, 1958, Nr 8, pp 28-32 (USSR)

ABSTRACT: Dykes of irrigation canals traversing sagging (loess) soil can be expediently erected by compacting the foundations with a preliminary wetting of the ground and by pouring loess into the water. This way a comparatively elastic body of the dyke is obtained, capable of enduring considerable deformations of the foundation. It is economical and ensures good results. During the pouring process the loess becomes more moist and an additional settling of the dyke's body and its foundations takes place, thus eliminating deformations of the dyke. As soon as the canal is filled with water, it becomes sufficiently reliable for operation. This method of erecting high and large dykes was first applied in 1943-1944, but so far has not been used on a large scale. The author gives detailed description of the erection of canal dykes of the Perepadnaya GES in the Tadzhik SSR by the described method,

Card 1/2

SOV-99-58-8-5/11

The Erection of Canal Dykes on Sagging Foundations by Means of Mechanized Pouring of Loess Deposits into the Water

and comes to the conclusion that it can be successfully applied for hydro-meliorative structures and is superior to other methods of building dykes. In addition to the advantages already stated, the author mentions: no necessity to pack the soil by mechanical means; the easy pouring of loess into water; the possibility of carrying out the work along a wide range. There are 2 Soviet references, 1 diagram and 1 table.

1. Inland waterways--Maintenance

Card 2/2

RUBINSHTEYN, A.L., professor, doktor tekhn.nauk; AREF'YEVA, T.I., kand.tekhn. nauk; KIRILLOV, A.A., dotsent, kand.tekhn.nauk; FROLOV, N.N. inzh.

Problems in the design of hydraulic structures on loess soils. Nauch.zap. MIIVKH 20:262-281 '58. (MIRA 13:6)
(Loess) (Soil mechanics)

FROLOV, N. N.: Master Tech Sci (diss) -- "Problems of the structure of dams and levees for irrigation canals on loess soils". Moscow, 1959. 24 pp (Moscow Inst of Water Economy Engineers im V. R. Vil'yams), 150 copies (KL, No 12, 1959, 130)

10(4) SOV/98-59-9-13/29

AUTHOR: Frolov, N.N., Candidate of Technical Sciences

TITLE: Deformations After Settlement of Loess Grounds Under Hydraulic Structure Foundations

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1959, Nr 9, pp 44-45 (USSR)

ABSTRACT: Long lasting deformations of loess ground under hydraulic structure, which occur after normal settlement, are caused by the weakening of ground cohesion which is the consequence of washing out cementing salts by seepage through the ground. The phenomena have formerly been studied by A.L. Rubinshteyn, A.A. Kirillov and G.L. Urmanova. The author gives data on settlement of the Yuzhnyy Golodnostepskiy Kanal, the Farkhadskaya GES, the Varzobskaya GES, and the canal in the Vakhshskaya Valley and proposes an empiric formula for computation of duration of the additional settlements, gained by comparing results of laboratory compaction tests on ground samples, and observation of the same ground

Card 1/2

Deformation After Settlement of Loess Grounds Under Hydraulic Structure Foundations

under a hydraulic structure. The author recommends introduction of the addition-settlement effect into the new Soviet standard on hydraulic structure design, because of the "N and TU 137-56" standards which deal only with normal settlements. There are 2 graphs, 1 table and 2 Soviet references.

FROLOV, N.N.

Compactibility of loess soils in the Golodnaya Steppe. Mat. po proizv. sil. Uzb. no.15:90-100 '60. (MIRA 14:8)

1. Moskovskiy institut inzhenerov vodnogo khozyaystva.
(Golodnaya Steppe--Soil mechanics)

FROLOV, N.N., kand.tekhn.nauk

Investigating the compaction of loess foundations under hydraulic structures. Nauch. zap. MIIVKH 23:171-196 '60. (MIRA 14:8)
(Perepadnaya Hydroelectric Power Station--Dams) (Loess)

FROLOV, N.N., kand.tekhn.nauk

Construction of dams from loess soils on settling foundations; method of mechanized dumping of loess into water. Nauch. zap. MIIVKH 23:197-209 '60. (MIRA 14:8)
(Perepadnaya Hydroelectric Power Station--Dams) (Loess)

KIRILLOV, A.A.; FROLOV, N.N.; ORLOVA, V.P., red.; DEYEVA, V.M., tekhn. red.

[Hydraulic structures in irrigation systems on sagging loess soils] Gidrotekhnicheskie sooruzheniia na orositel'nykh sistemakh v lessovykh prosadochnykh gruntakh. Moskva, Sel'khozizdat, 1963. 270 p. (MIRA 17:2)

ATAYEV, S.S., kand.tekhn.nauk; ZALOGO, V.F., inzh.; KOROBOCHKIN, M.A., inzh.; PEVZNER, E.D., kand.tekhn.nauk; ROGOVIN, Ya.A., inzh.; RAKUT', B.A., inzh.; RUBIN, V.I., inzh.; TIRKEL'TAUB, I.D., inzh.; FROLOV, N.P., kand.tekhn.nauk; YANKOVSKIY, I.P., inzh.; MOROGOVSKIY, V.M., inzh., retsenzent; ZHIZHEL', I.M., inzh., red.; KAZACHEK, G.A., red.; GOLUBTSOVA, P., red.; STEPANOVA, N., tekhn.red.

[Builder's handbook] Spravochnik mastera-stroitelia. Izd.4., perer. i dop. Minsk, Gos.izd-vo BSSR. Red.nauchno-tekhn. lit-ry, 1959. 659 p. (MIRA 13:1)

1. White Russia. Ministerstvo gorodskogo i sel'skogo stroitel'stva.

(Building)

FROLOV, N. P.

BARDIN, I.P.; BORISOV, A.F.; BELAN, R.V.; YERMOLAYEV, G.I.; VAYSBERG, L.E.; ZHEREBIN, B.N.; BORODULIN, A.I.; SHAROV, G.V.; DOMNITSKIY, I.F.; CHUSOV, F.P. SOROKO, L.N.; KLIMASENKO, L.S.; PAVLOVSKIY, S.I.; ZIL'BERSHTEYN, M.B.; LYULENKOV, I.S.; NIKULINSKIY, I.D.; BRAGINSKIY, I.A.; SALOV, Ye.M.; TROSHIN, N.F.; PETRIKEYEV, V.I.; ARGUNOV, M.I.; DUL'NEV, F.S.; BIDULYA, L.N. GAYNANOV, S.A.; FROLOV, N.P.; VINICHENKO, V.S.; KOGAN, Ye.A.

G.E.Kazarnovskii; obituary. Stal' 15 no.8:757 Ag'55. (MLRA 8:11)
(Kazarnovskii, Grigorii Efimovich, 1887-1955)

GRIMAL'SKIY, V.L., prof.; CHETYRKIN, V.S., prof., red.toma; RUD', G.Ya., kand.sel'skokhoz.nauk, red.; SUBBOTOVICH, A.S., kand.sel'skokhoz. nauk, red.; KOLESNIK, L.V., doktor sel'skokhoz.nauk, red.; SEMENOV, A.N., doktor tekhn.nauk, red.; KOVARSKIY, A.Ye., doktor sel'skokhoz.nauk, red.; FROLOV, N.P., doktor ekonom.nauk, red.; MATSYUK, L.S., kand.sel'skokhoz.nauk, red.; GUSAK, I.V., kand.tekhn.nauk, red.; URSUL, D.T., kand.filos.nauk, red.; LEGAS', I.Ye., kand. istor.nauk, red.; SHEVCHUK, I.P., kand.ekonom.nauk, red.; KACHANOVA, N., red.; TIMOSHENKO, A.G., kand.sel'skokhoz.nauk, zamestitel' red.; SHPANER, V., tekhn.red.

[Bodies of water of the Reut Basin, their hydrobiological conditions and the outlook for their utilization in commercial fishing.] Vodoemy basseina reki Reuta, ikh gidrobiologicheskii rezhim i perspektivy rybokhoziaistvennogo ispol'zovaniia. Kishinev, Izd-vo sel'skokhoz. lit-ry, 1962. 191 p. (Kishinev.Sel'skokhoziaistvennyi institut im. M.V.Frunze. Trudy, vol.29). (MIRA 17:2)

FROLOV N. P.

SOV/137-58-8-16777

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 78 (USSR)

AUTHORS: Mikhaylov, M.M., Uspenskiy, Ya.V., Frolov, N.P.

TITLE: Making High-speed Steel by the Methods of Powder Metallurgy (Polucheniye bystrorezhushchey stali metodami poroshkovoy metallurgii)

PERIODICAL: Tekhnol. avtomobilestroyeniya, 1958, Nr 1, pp 25-26

ABSTRACT: A procedure for making powder metal products of R18 high-speed steel is described. Reduced W powder, Fe, ferrochrome, and ferrovanadium scale powder finely ground in a liquid medium were mixed to yield an alloy of the following % composition: W 17-19, V 1-1.5, Cr 4-5, C 0.7-0.8, the remainder being Fe, and were reduced by a nitrogen-hydrogen mixture at 850-900°C. The resultant sponge was ground in benzene, and the fine powder thus obtained (particle size $\leq$1-3 microns) was pressed under 1250 kg/cm^2 pressure, and sintered in a mixed nitrogen-hydrogen atmosphere at 1360°C. The end product was of the following % composition: W 18, V 1, Cr 4, C 0.12, the residue being Fe. To increase the C contents, sintering was done in a carburizer (95% activated charcoal and 5% $BaCO_3$) under the

Card 1/2

Making High-speed Steel by the Methods of Powder Metallurgy

following conditions: Holding at 950° for 1 hour, heating to 1280° and holding there for 2 hours. The use of fine powders made for more complete homogenation. Shrinkage in sintering was 25%, the residual porosity 3-4% (density 8.16 g/cm^3). After standard heat treatment, the resultant specimens showed satisfactory cutting and mechanical properties (R_C after sintering 54-56, R_C after heat treatment 61-63, σ_{bi} 240 kg/mm^2). To avoid over-carburization, W carbide was introduced into the initial charge in place of W. The microstructure of this alloy was characterized by equiaxial grains of austenite and carbides.

1. Powder alloys--Preparation 2. Powder alloys--Properties 3. Tool steel--Production

R.A.

Card 2/2

FROLOV, N.P.

SOV/133-58-6-18/33

AUTHOR: Soroko, L.N., Nefedov, A.A., Yershov, V.N., Masyukov, S.N. (Deceased), Frolov, N.P. and Braunshteyn, R.A.

TITLE: Rolling of Lightened Nr 19 Beam from Low Alloy Steel 09G2D (Prokatka oblegchennoy balki No 19 iz nizkolegirovannoy stali 09G2D)

PERIODICAL: Stal', 1958, Nr 6, pp 532 - 537 (USSR)

ABSTRACT: An experimental rolling of a lightened Nr 19 beam from low-alloy steel 09G2D (composition %: C $\leq$ 0.12; Mn 1.4-1.7; Si 0.2-0.4; Cu 0.22-0.44; Cr $\leq$ 0.30; Ni 0.01-0.03; S and P $\leq$ 0.04) is described. Lightened Nr 19 beam (Figure 1) (TuTs 08-124-57) weighs 19.5% less per m than normal Nr 19 beam (GOST-5267-50) which is usually rolled from steel St3. For experimental rolling, four heats of steel 09G2D were made. Rolling was done on the mill 500 from shaped semis (Figure 2). The calibration of rolls is shown in Figure 3. The metal was heated from cold charging to an average temperature of 1 170 °C. The decrease of temperature in the individual passes - Figure 4. The final temperature of the neck of the beam was 60 °C lower than that of normal beam. Frequency distribution of deviations of dimensions from the nominal ones - Figure 5. The comparison of the loads on the individual stands during rolling of normal and lightened Nr 19

Card1/3

Rolling of Lightened Nr 19 Beam from Low Alloy Steel 09G2D

beams together with the maximum permissible loads and rpm of motors - Table 1. The comparison of the mill throughput per hour during rolling normal and lightened Nr 19 beams - Table 2. Mechanical properties of specimens cut from various places of the beam - Tables 3 and 4. It is concluded that: 1) rolling of light Nr 19 beams on the mill 500 is possible with the existing equipment; 2) dimensions of the profile obtained were situated mainly in the range of minus tolerances; 3) the temperature of the neck at the end of rolling was 790 °C, i.e. 60 °C below the temperature obtained during rolling normal beam Nr 19; 4) loads on motors of roughing stands was 22-23% higher than during rolling of normal Nr 19 beam. Loads on the finishing stand either do not exceed or only slightly exceed permissible ones; 5) specific power consumption was 37% higher than during rolling normal Nr 19 beam from St.3 steel; 6) the output of the mill during rolling of the light beam decreases by 17%. It is expected that with mastering of the process, this decrease can be reduced to 8%; 7) the chemical composition and mechanical properties of 09G2D steel

Rolling of Lightened Nr 19 Beam from Low Alloy Steel 09G2D

satisfy the requirements of standard ChMTU-5688-56 for low-alloy steels. The following engineers participated in the work: N.I. Khoroshev, I.M. Sharapov and F.A. Firsakov. There are 5 figures and 4 tables.

ASSOCIATIONS: Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Combine) and Ural'skiy institut chernykh metallov (Urals Institute of Ferrous Metallurgy)

Card 3/3

1. Beams--Production 2. Rolling mills--Applications

FROLOV, N.F., inzh.

Fitting outlined sections of intricate design. Sudostroenie 26 no.8:54-58 Ag '60. (MIRA 13:10)
(Hulls (Naval architecture))

SKOROKHODOV, N.Ye., dotsent; CHELYSHEV, N.A., kand.tekhn.nauk; ZAYKOV, M.A., dotsent; FROLOV, N.P., inzh.; KOROLEV, A.S., inzh.; KRAVCHENKO, L.Ya., inzh.; SKOROKHODOVA, V.F., inzh.; ABAKUMOV, V.A., dotsent [deceased]; KAFTANOV, M.P., inzh.

Investigating conditions of rolling plain and shaped sections on a medium-shape rolling mill. Trudy NTO Chern.met. 15:24-55 '59. (MIRA 13:7)
(Rolling mills)

FROLOV, N.P., inzh.

Causes of sand fusion on rion castings. Lit. proizv. no. 12:43-44 D '60. (MIRA 13:12)

(Iron founding--Defects)

FROLOV, N.P.

Using bentonite clays in the making of large iron castings.
Lit. proizv. no.12:29 D '61. (MIRA 14:12)
(Iron founding) (Bentonite)

FROLOV, N.P.

Rapid determination of the moisture of molding and core mixtures.
Lit.proizv. no.9:42 S '62. (MIRA 15:11)
(Sand, Foundry--Testing)

SHAMOVSKIY, E.Kh.; ZYKOV, A.D.; KAFTANOVA, Z.K.; KRAVCHENKO, L.Ya.; FROLOV, N.P.; ZHURAVKIN, Ye.A.; GORBATYUK, V.L.

Mechanizing the flame scarfing of blooms. Metallurg 7 no.8:24-27 Ag '62. (MIRA 15:9)

1. Sibirskiy metallurgicheskiy institut i Kuznetskiy metallurgicheskiy kombinat.
(Steel ingots) (Metal cleaning)

FROLOV, Nikolay Prokhorovich; BESSONOV, Valeriy Georgiyevich; ZALOGO, Vitaliy Fedorovich; PETSOL'D, Timofey Maksimovich; SMEKH, Ivan Vasil'yevich; ATAYEV, S.S., doktor tekhn. nauk prof., nauchn. red.

[Mesh-reinforced concrete products] Armotsementnye konstruktsii. Minsk, Nauka i tekhnika, 1965. 90 p.
(MIRA 18:8)

L 27220-65 EWT(m)

ACC NR: AM6002131 Monograph UR/ 22

Frolov, Nikolay Prokhorovich; Bessonov, Valeriy Georgiyevich; Zalogo, Vitaliy Fedorovich; Petsol'd, Timofey Maksimovich; Smekh, Ivan Vasil'yevich B+1

Mesh-reinforced concrete constructions (Armotsementnyye konstruktsii) Minsk, Nauka i tekhnika, 1965. 90 p. illus., biblio. 2000 copies printed.

TOPIC TAGS: construction material, reinforced concrete, engineering technology

PURPOSE AND COVERAGE: The book recommends technology to be used in manufacturing reinforced-concrete structures. It summarizes the results of the investigations of rigidity and crack-resistance of reinforced concrete and analyzes some particular features of its work and design. In addition, an example of the design of a reinforced concrete structure is given, and the results of an experimental investigation of its performance are outlined. The book is intended for engineers and technicians working in building and designing organizations, as well as for students specializing in construction and research workers in this field. There are 46 references, of which 26 are Soviet.

TABLE OF CONTENTS:

Card 1/2

L 27220-66

ACC NR: AM6002131

0

Ch. II. Materials and techniques in making reinforced concrete structures -- 12

Ch. III. Investigation of the physical and mechanical properties of reinforced concrete -- 22

Ch. IV. Features in the performance of reinforced concrete -- 47

Ch. V. Design of reinforced concrete structures -- 73

Bibliography -- 89

SUB CODE: 11/ SUBM DATE: 09Jul65/ ORIG REF: 029/ OTH REF: 017/

Card 2/2

FROLOV, N.S.; FRENKEL', F.Z.; MATVIYENKO, A.K.

Automatic hydraulic dust control in loading rock with the PML-5 loader. Sbor.anuch.trud.Kriv.fil.IGD AN URSR no.1:23-25 '62. (MIRA 16:4)

(Mine dusts--Prevention)
(Loading and unloading--Equipment and supplies)

NEDIN, V.V.; GEL'MAN, D.Z.; POPOVICH, S.P.; FRENKEL', F.Z.; FROLOV, N.S.

Ways of improving the ventilation of shafts and blocks in working layers in double levels. Sbor.nauch.trud.Kriv.fil. IGD AN URSR no.1:49-57 '62. (MIRA 16:4)
(Krivoy Rog Basin--Mine ventilation)

GEL'MAN, D.Z.; POPOVICH, S.P.; FRENKEL', F.Z.; FROLOV, N.S.

Dust formation during scraper haulage of ore. Bor'ba s pyl'. 5:174-177 '62. (MIRA 16:5)

1. Krivorozhskiy filial Instituta gornogo dela AN UkrSSR.
(Mine ventilation) (Ore handling)

KOBYNEK, S.D.; FROLOV, N.S.

Device for testing parachutes. Sbor. rats. predl. vnedr. v proizv. no.2:9-10 '61. (MIRA 14:7)

1. Trest "Dzherzhinskruda", rudoupravleniye imeni Il'icha. (Mine hoisting)

NIKITIN, I.P., inzh.; FROLOV, N.S., inzh.

The APB-1 automatic safety block. Bezop.truda v prom. 5 no.6:24 Je '61. (MIRA 14:6)

(Safety appliances)

FROLOV, N. S., KAZAKOV, V. A., SKRYL, I. I., DVORETSKIY, A. S., SEREBRYAKOV, P. A., ORAVETS, Y., KOLESOV, I. V., and SIKOLENKO, V. F.,

"Choice of Coordinates in Regard to the Entrance of Particles into an Emulsion Chamber (STsU-1),

Joint Institute of Nuclear Research, Dubna, USSR.

report submitted for the IAEA conf. on Nuclear Electronics, Belgrade, Yugoslavia 15-20 May 1961

ACCESSION NR: AR4032164 S/0058/64/000/002/A039/A039

SOURCE: Ref. zh. Fiz., Abs. 2A337

AUTHORS: Dvoretskiy, A. S.; Kazakov, V. A.; Kolesov, I. V.; Oravets, Yu.; Sikolenko, V. F.; Skry*1', I. I.; Frolov, N. S.

TITLE: Installation for automatic registration of the coordinates of a particle entering a pellicle stack

CITED SOURCE: Tr. 5-y Nauchno-tekhn. konferentsii po yadern. radioelektron. T. 4. M., Gosatomizdat, 1963, 15-27

TOPIC TAGS: high energy particle interaction, emulsion technique, electronic particle identification, particle trajectory recording, particle trajectory photography

TRANSLATION: An automatic installation is described, combining the emulsion technique for high-energy particle interactions and the

Card 1/2

ACCESSION NR: AR4032164

electronic method of identifying the particles. The installation can register the coordinates at which the required particles enter the pellicle stack with ±0.5 mm accuracy. It consists of a spark-counter telescope, a pellicle stack, a recording chamber, and electronic control blocks. The coordinates of the spark that develops along the track of the particle passing through the counters are photographed through an optical unit that produces pictures of two mutually-perpendicular projections of each spark on one frame of motion picture film. High accuracy in the determination of the coordinates is attained by precision construction of the optical and mechanical units of the installation, by selecting the optimum operating conditions of the spark-counter telescope, and by using a triggered-voltage pulse generator with low delay (not more than 0.25 μsec). The use of the insulation described yields a substantial gain in the time required to interpret the experimental data. L. I.

DATE ACQ: 31Mar64 SUB CODE: PH, SD ENCL: 00

Card 2/2

L 11381-63 EWT(m)/BDS AFFTC/ASD

S/120/63/000/002/012/041

55
54

AUTHOR: Kolesov, I.V., Sikolenko, V.F., Skryl', I.I., and Frolov, N.S.

TITLE: An instrument for photographing discharges in spark counters

PERIODICAL: Pribory i tekhnika eksperimenta, March-April 1963, v. 8, no. 2, 54-58

TEXT: The article describes a device for taking pictures of discharges in spark counters from two mutually perpendicular directions and reference marks with a single frame of film in a moving-picture camera that need not be greatly modified for this purpose. The instrument is part of a system for determining the points at which particles enter emulsions. Control is either automatic or manual from a separate control unit; there is provision for double-exposure prevention and malfunction indication. The position of sparks may be determined to within ± 0.1 mm. There are five figures.

ASSOCIATION: Joint Institute for Nuclear Research

Card 1/2

FROLOV, N.S., gornyy inzh.

Effect of the layout of air feeding and air drawoff pipes on the distribution of air in ventilation systems. Sbor.nauch. trud. KGRI no. 21 115-122 '63. (MIRA 17:7)

FROLOV, N.S.

New method of calculating mine ventilation systems. Sbor. nauch. trud. KGRI no.23: 102-105 '63 (MIRA 17:8)

FROLOV, N.S.

Aerodynamic modeling of mine ventilation systems. Sbor. nauch. trud. KGRI no.23:132-137 '63 (MIRA 17:8)

L 05899-65 EWT(d)/EED-2/EWP(1) Pq-4/Pg-4/Pk-4 IJP(c) BB/GG

ACCESSION NR: AP5015351 UR/0286/65/000/009/0096/0096

40
39
B

AUTHOR: Semenov, B. Yu.; Frolov, N. S.

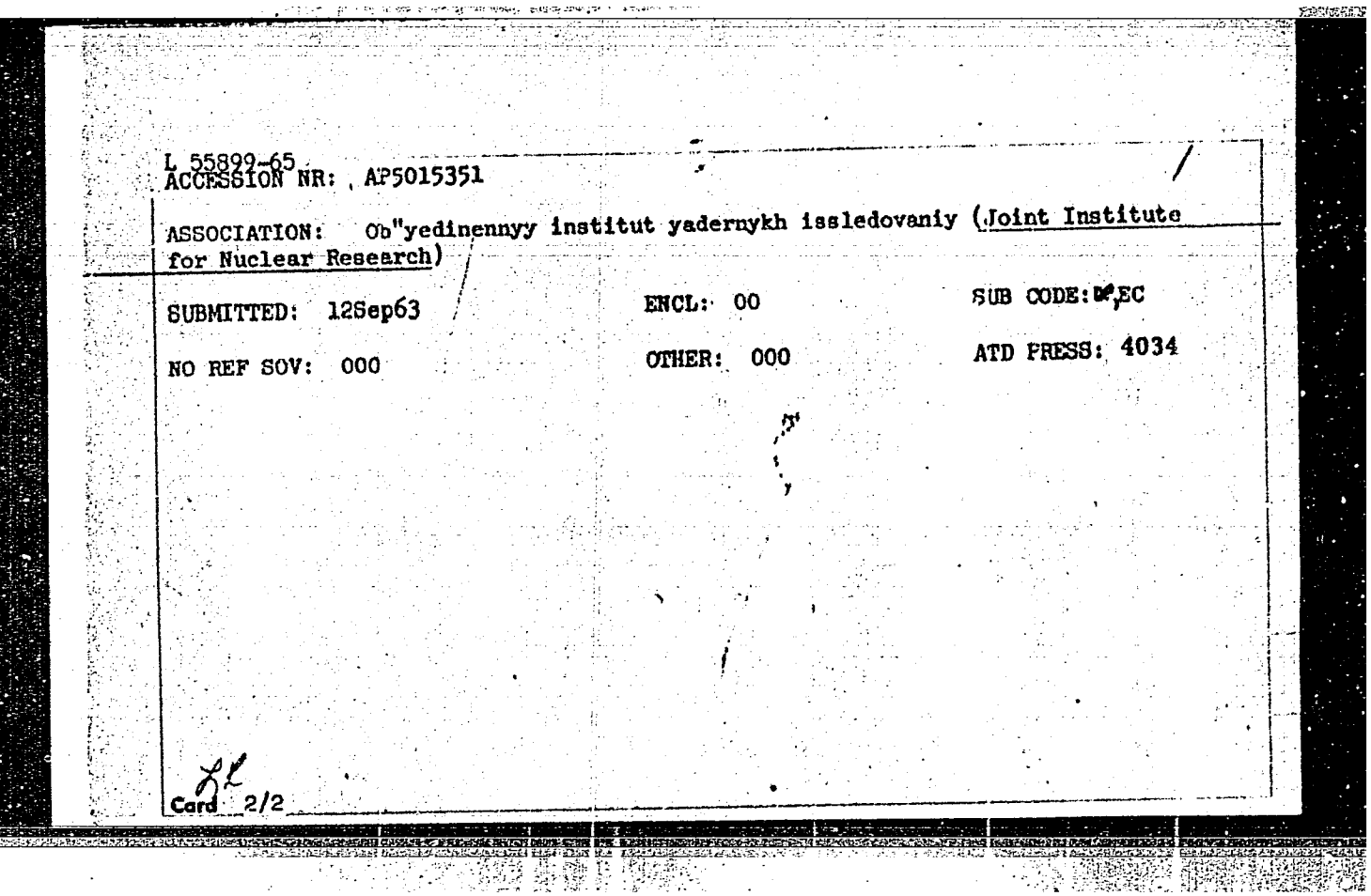
TITLE: Address-selection analog device for digital output printers. 16C Class 42, No. 170768

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 96

TOPIC TAGS: address selection device, digital output printer, address selection, computer component, address pulse

ABSTRACT: The proposed address-selection analog device for digital output printers contains a shaping circuit of linearly variable voltages, a shaping circuit of sawtooth voltages, and a comparison circuit. It is designed to select one address pulse from a sequence for a given channel. For this purpose, each channel carries a monostable multivibrator of pulse delays for a half interval between channels, two coincidence circuits, and a trigger shaper with 1 and 0 inputs. Orig. art. has: 1 figure. [LW]

Card 1/2



L 55899-65
ACCESSION NR: AP5015351

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Research)

SUBMITTED: 12Sep63 ENCL: 00 SUB CODE: EC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4034

Card 2/2

1. FROLOV, N. S.

2. USSR (600)

4. ~~Physics and Mathematics~~

7. Geographical Outline of Nature and Agricultural Activity of the Inhabitants in Different Areas of the Soviet Union, Yu. G. Saushkin. (Moscow, Geography Press, 1947) Reviewed by N. S. Frolov, Sov. Kniga No. 2, 1949.

9. [redacted] Report U-3081, 16 Jan. 1953. Unclassified.

FROLOV, N. S.

Frolov, N. S. "An introduction to the geography of agriculture", Uchen. zapiski (Sarat. gos. in-t im. Chernyshevskogo), Vol. XXII, Geographic issue, 1949, p. 3-18.

SO: U-4392, 19 August 53, (Letopis 'Zhurnal 'nykh Statey, No 21, 1949).

1. FROLOV, N. S.

2. USSR (600)

4. Geology and Geography

7. Lands along the Volga, V.V. Pokshishevskiy. V. N. Sementovskiy, editor. (Moscow, Geography Press, 1951). Reviewed by N. S. Frolov, Sov. Kniga, No. 11, 1951.

9. [redacted] Report U-3081, 16 Jan. 1953, Unclassified.

FROLOV, N.S.

"Urals." P.N.Stepanov. Reviewed by N.S.Frolov. Izv.Vses.geog. ob-va 87 no.3:304-305 My-Je '55. (MLRA 8:9)
(Ural Mountain region) (Stepanov, Petr Nikolaevich, 1887-)

FROLOV, Nil Spiridonovich; ZUBAREVA, T.V., red.

[Development and state of soil improvement in the U.S.S.R.] Razvitie i sostoianie melioratsii v SSSR. Moskva, Kolos, 1965. 294 p. (MIRA 18:8)

L 09463-67

ACC NR: AR6033770 SOURCE CODE: UR/0058/66/000/007/A029/A029

AUTHOR: Prokof'yev, Yu. P.; Semenov, B. Yu.; Sinayev, A. N.; Frolov, N. S.

TITLE: Simple single-channel amplitude analyzer for the registration of rare events

SOURCE: Ref. zh. Fizika, Abs. 7A258

REF SOURCE: Tr. 6-y Nauchno-tekhn. konferentsii po yadern. radioelektron. T. 3. Ch. 1. M., Atomizdat, 1965, 158-170

TOPIC TAGS: amplitude analyzer, potentiometer, pulse analyzer, pulse amplitude/EPP-09 recording potentiometer

ABSTRACT: An investigation is made of an amplitude analyzer, similar to the one described in the work of Birulev et al. (RZhFiz, 1964, 2A162), where the recording EPP-09 potentiometer is used as the amplitude analyzer. When the pulse comes to the analyzer input, the carriage of the recording potentiometer travels a distance proportional to the pulse amplitude, and then returns. The dead time and the number of the analyzer channels are determined by the characteristics of the record

Card 1/2

L 09463-67
ACC NR: AR6033770

ing potentiometer. The number of channels can be brought to 127. The pulses at the analyzer input must be positive with an amplitude ranging from 0.3 to 6 v and a duration of 1 to 1.5 μsec. The instrument works dependably in a temperature range of 0—40C. The integral nonlinearity is less than 0.5 percent. The analyzer is fed with a +8 and -8 v voltage, with a $\sim$0.1-percent time and temperature instability, and weighs 0.3 kg. All the analyzer circuits are assembled on semiconductors. A description is given of the block diagram and the operation of all the parts of the instrument. The analyzer is designed for the registration of small events. [Translation of abstract]

SUB CODE: 14, 20/

Card 2/2

L 15165-66 EWT(d)/EWP(1) IJP(c) BB/GG/JXT(BF)

ACC NR: AP5027017 SOURCE CODE: UR/0120/65/000/005/0102/0105

AUTHOR: Semenov, B. Yu.; Frolov, N. S.

ORG: Joint Nuclear Research Institute (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Analog address selectors for an output digit printer

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 102-105

TOPIC TAGS: multichannel analyzer, digit printer

ABSTRACT: The development of a digit printer intended for a 256-channel analyzer is reported; the printer has a sequential storage and a double coding of numbers. The single selection of an address is ensured by a code-analog converter and by a special selection circuit that controls the logic of operations. Thus, the distinguishing feature of the new printer is the use of an analog circuit in the address unit instead of the conventional counter circuit. The new printer consists only of 1 trigger, 2 gates, 1 single-shot multivibrator, 1 sawtooth circuit, 1 voltage-ramp circuit, and 1 comparison circuit; this is much smaller than the amount of components required for a conventional 256-channel-serving printer. "In conclusion, the authors wish to thank A. N. Sinayev for his constant interest and help." Orig. art. has: 3 figures.

SUB CODE: 09 / SUBM DATE: 25Aug64 / ORIG REF: 004

Card 1/1 UDC: 681.142.6

SEMENOV, B.Yu.; FROLOV, N.S.

Analog address-selecting circuit for an output digit-printing device. Prib. i tekh.eksp. 10 no.5:102-105 S-O '65.
(MIRA 19:1)

1. Ob"yedinennyy institut yadernykh issledovaniy, Dubna.
Submitted Aug.25, 1964.

FROLOV, N. V.

USSR/Geophysics - Conferences May/Jun 52

"Chronicles," K. M. Feodot'yev

"Iz Ak Nauk SSSR, Ser Geolog" No 3, pp 158-160

1. A general meeting was held 2 Feb 52 by the Dept of Geol and Geog Sci, Acad Sci USSR. Reports were read by V.A. Nikolayev, Corr Mem, Acad Sci USSR, and N.V. Frolov, Cand Geol-Mineralogical Sci on the geology of granites.
2. Results of 4th Conf on Exptl Mineralogy and Petrography, held 6 - 9 Feb 52 at Moscow; 47 reports were read.

220T70

FROLOV, N.V., student; TSFAS, B.S., dotsent, nauchnyy rukovoditel' raboty

Accurate calculation of a heavy elastic string. Sbor.dokl. Stud.nauch.ob-va Fak.mekh.sel'. Kuib.sel'khoz.inst.no.1:61-70 '62. (MIRA 17:5)

1. Kuybyshevskiy sel'skokhozyaystvennyy institut.

L 00750-67 EWT(m)/EWP(w) IJP(c) EM

ACC NR: AP6022864 SOURCE CODE: UR/0145/66/000/002/0048/0054

AUTHOR: Tsfas, B. S. (Candidate of technical sciences, Docent); Frolov, N. V. (Assistant)

ORG: None

TITLE: Pressure of a cylindrical rod against a support assuming a small clearance between support and rod

SOURCE: IVUZ. Mashinostroyeniye, no. 2, 1966, 48-54

TOPIC TAGS: pressure distribution, material deformation, static pressure, CONTACT STRESS

ABSTRACT: The authors consider pressure distribution for a system consisting of a cylindrical rod fitted into a cylindrical hole with a small clearance between the two members. It is assumed that the end of the rod extends a given distance beyond the edge of the support and that it is loaded by a given weight so that it is warped through a slight angle and the sections of contact between support and rod are changed. It is further assumed that the members of the mating pair are absolutely rigid and that only the contact between them is deformable. Formulas are derived for the pressure distribution in the contact sections and for the principal linear and angular dimensions of the contact areas. A comparison with theoretical data calculated from formulas applicable to mating pairs of this type with a large clearance shows that the

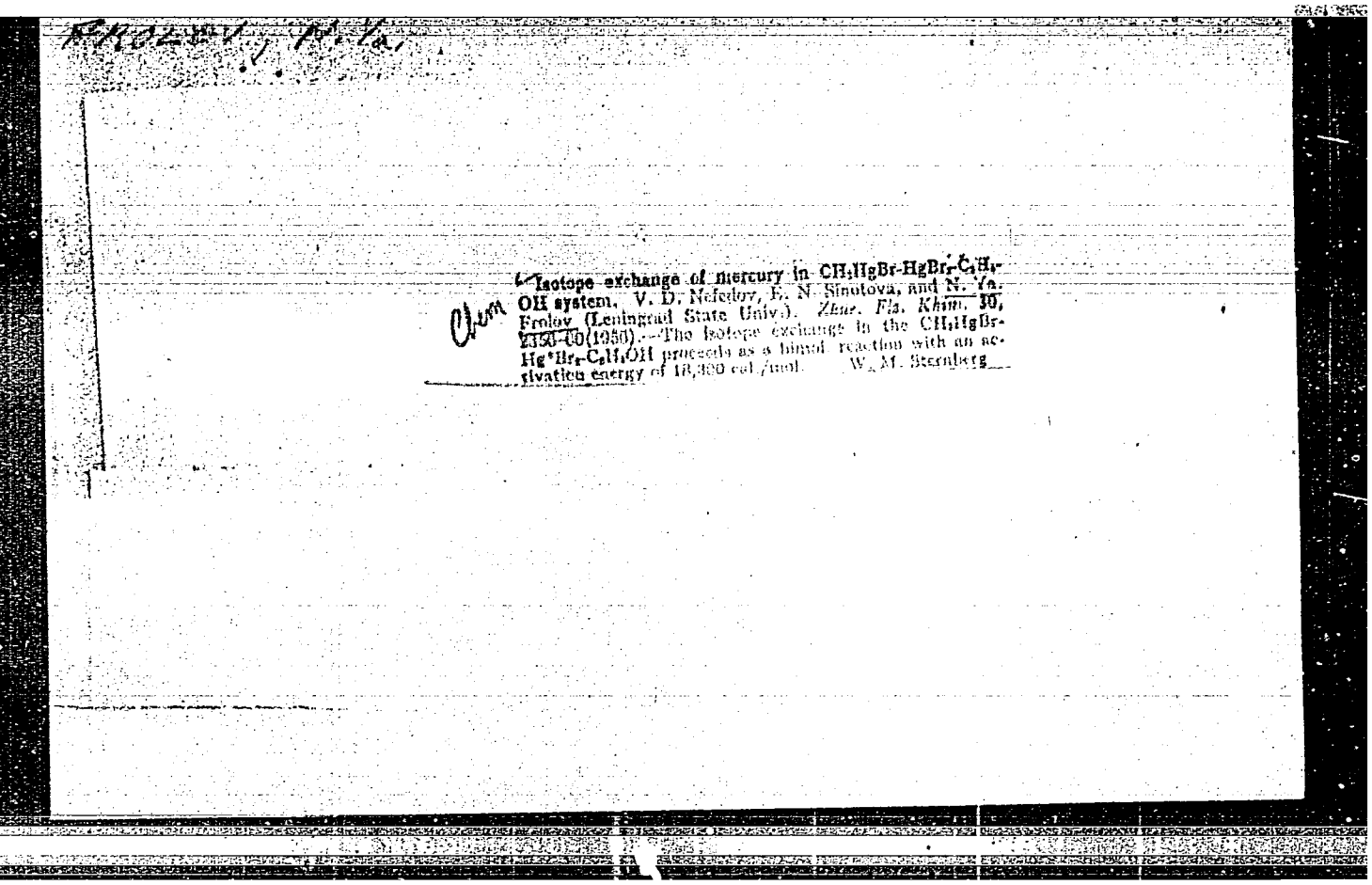
Card 1/2 UDC: 531.78

L 00750-67
ACC NR: AP6022864

new method gives considerably greater linear dimensions and pressures and much smaller angular dimensions. The paper was presented for publication by Candidate of physical and mathematical sciences N. V. Kliyentov. Orig. art. has: 3 figures, 22 formulas.

SUB CODE: 20/ SUBM DATE: 11Mar64/ ORIG REF: 005

Card 2/2



Isotope exchange of mercury in CH_3HgBr-$HgBr_2$-C_2H_5OH system. V. D. Nefedov, E. N. Sinotova, and N. Ya. Frolov (Leningrad State Univ.). *Zhur. Fiz. Khim.* 30, 2350-60(1956).—The isotope exchange in the CH_3HgBr-Hg^*Br_2-C_2H_5OH proceeds as a bimol. reaction with an activation energy of 18,300 cal./mol. W. M. Sternberg

SOV/86-58-8-24/37

AUTHOR: Frolov, N.Ya., Engr Maj

TITLE: Machine Tools with Program Control (Stanki s programmnym upravleniyem)

PERIODICAL: Vestnik vozdushnogo flota, 1958, Nr 8, pp 65-71 (USSR)

ABSTRACT: The article deals with the program control of machine tools. The author states that the program control makes it possible to automatize the conventional type of universal machine tools, and to control several machine tools simultaneously from a single control desk. The transition from processing of parts of a certain design to the processing of parts of different design can be made rapidly, merely by changing the program control cards. The processing of various parts with machine tools under program control is done automatically. It is based on a follow-up system of digits, in which the perforated cards, perforated tapes, cine-camera

Card 1/2

tapes, and magnetic tapes are used as primary records. Depending on the number of necessary commands, various variants can be used in the program control. The author then describes the principles of program control operation. Four diagrams.

L 54768-65 EWI(l)/EWT(m)/EPF(c)/EPR/EWP(j)/EEC(t)/T Pc-4/Pr-4/Pg-4/Ps-4/Pl-4/
Pl-4 WW/LHB/GG/RM

ACCESSION NR: AP5015619 UR/0057/65/035/006/0990/0995

AUTHOR: Sazonov, D.M.; Frolov, N.Ya.

TITLE: Electromagnetic excitation of a radially laminated spherical medium

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.6, 1965, 990-995

TOPIC TAGS: antenna, electromagnetic field, spherical shell structure, electromagnetic lens, mathematical method

ABSTRACT: The authors develop an algorithm for calculating the field of a system of concentric spherical shells excited by an arbitrary distribution of electric and magnetic currents in one of them. The dielectric constant and permeability are assumed to be constant within a shell but to vary from shell to shell. The calculations are of interest in connection with antenna domes and spherical lens antennas. The laminae are treated as transmission lines. The boundaries between successive laminae then appear formally as four-poles, each de-

Card 1/3

L 54768-65

ACCESSION NR: AP5015619

scribed by its transfer matrices for TE and TM waves. The over-all transfer matrices are matrix products of the matrices for the several shells, and the reflection coefficients are simply expressed in terms of the elements of the product matrix. The wave amplitudes themselves are derived with the aid of the field reciprocity theorem, using a single spherical harmonic as the auxiliary field. The calculation method is particularly suitable for use with computers. Increasing the number of laminae considered does not necessitate thorough reprogramming but merely requires more machine time. The method is therefore appropriate for calculating the fields of spheres with continuously radially variable dielectric constants and permeabilities. "The authors thank the staff of the MRI antenna design department and its head, Professor G.T.Markov, for the interest they have shown in this work and for discussing the results." Orig.art. has: 19 formulas and 1 figure.

Card 2/3

L 54768-65
ACCESSION NR: AP5015619

ASSOCIATION: Moskovskiy energeticheskoy institut (Moscow Power Engineering Institute)

SUBMITTED: 17Aug64 ENCL: 00 SUB CODE: EM,EC

NR REF SOV: 002 OTHER: 000

Card 3/3

1. FROLOV, N. Ye.

2. USSR (600)

4. Thread - Testing

7. Testing threads and fabrics for fatigue. Tekst. prom. 12 no. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

FROLOV, N.Ye.

Manufacture of belting with an elastic edge. Tekst.prom. 20 no.9:74-76 S '60. (MIRA 13:10)

1. Zaveduyushchiy laboratoriyey Yaroslavskogo tekhnologicheskogo nauchno-issledovatel'skogo instituta.
(Belts and belting)

Frolov, O.A.

BOROVSKIY, P. V. PHASE I BOOK EXPLOITATION SOV/6206 75

Konferentsiya po teorii plastin i obolochek. Kazan', 1960.

Trudy Konferentsii po teorii plastin i obolochek, 24-29 oktyabrya 1960. (Transactions of the Conference on the Theory of Plates and Shells Held in Kazan', 24 to 29 October 1960). Kazan', [Izd-vo Kazanskogo gosudarstvennogo universiteta] 1961. 426 p. 1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial. Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina.

Editorial Board: Kh. M. Mushtari, Editor; F. S. Isanbayeva, Secretary; N. A. Alumyae, V. V. Bolotin, A. S. Vol'mir, N. S. Ganiyev, A. L. Gol'denveyzer, N. A. Kil'chevskiy, M. S. Kornishin, A. I. Lur'ye, G. N. Savin, A. V. Sachenkov, I. V. Svirskiy, R. G. Surkin, and A. P. Filippov. Ed.: V. I. Aleksagin; Tech. Ed.: Yu. P. Semenov.

PURPOSE: The collection of articles is intended for scientists and engineers who are interested in the analysis of strength and stability of shells.

Card 1/14

Transactions of the Conference (Cont.) SOV/6206

COVERAGE: The book is a collection of articles delivered at the Conference on Plates and Shells held in Kazan' from 24 to 29 October 1960. The articles deal with the mathematical theory of plates and shells and its application to the solution, in both linear and nonlinear formulations, of problems of bending, static and dynamic stability, and vibration of regular and sandwich plates and shells of various shapes under various loadings in the elastic and plastic regions. Analysis is made of the behavior of plates and shells in fluids, and the effect of creep of the material is considered. A number of papers discuss problems associated with the development of effective mathematical methods for solving problems in the theory of shells. Some of the reports propose algorithms for the solution of problems with the aid of electronic computers. A total of one hundred reports and notes were presented and discussed during the conference. The reports are arranged alphabetically (Russian) by the author's name.

Card 2/14

S/185/60/005/003/014/020
D274/D303

26599

9,4300

AUTHORS: Koshel', O.M., Lytvynov, R.O. and Frolov, O.S.

TITLE: The effect of water vapor on the properties of germanium triodes

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 3, 1960, 417-418

TEXT: Effects are described which were observed during the study of creepage of the reverse current in p-n junctions of germanium triodes which were protected from the surrounding medium, in the presence of water vapor. The reverse collector-current was investigated after the application of a displacement voltage of 0.25 - 3 v. The frequency dependence was investigated of the equivalent capacitance C_c and the dynamic resistance R_e of the collector p-n transition in the 20 cy - 150 kc range. The measured signal did not exceed 20 - 30 millivolt. First, experiments were conducted in a vacuum of approximately $5 \cdot 10^{-6}$ mm Hg. In that case practically

Card 1/3

no change in the current was observed after applying the voltage. Then the current was investigated in the presence of water vapor. Creepage of the current was observed, i.e. during 30 to 60 minutes, the current changed by a factor of 1.5 to 4, approaching saturation. In addition, the frequency dependence of C_e and R_e was observed at low frequencies. R_e decreases with frequency and C_e decreases too. The frequency dependence of C_e is related to the displacement voltage; with increasing voltage the capacitance decreases at higher frequencies; the capacitance assumes even negative values which shows that the reactance of R_e becomes inductive. Such a frequency dependence of C_e was observed in all (5) the investigated specimens at a water vapor pressure of 20 mm Hg; it was not observed at low pressure (e.g. 1 mm Hg). At lower frequencies, the inductive character of the reactance was more pronounced. The appearance of quasi-inductivity may be due to electrochemical processes which arise in the water film, adsorbed at the p-n junction surface, or to the possible injection of minority carriers into the contact germanium-electrolyte. It is know that injection can be

accompanied by the appearance of an inductive component in the impedance of p-n junctions. There are 2 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: Toshio Misawa, J. Phys. Soc. Japan, 12, 882, 1957.

ASSOCIATION: Instytut fizyky AN USSR (Physics Institute AS UkrSSR)

SUBMITTED: February 20, 1960

Card 3/3

S/181/62/004/004/001/042
B108/B102

24.7700

AUTHORS: Litovchenko, V. G., Frolov, O. S., and Pao Shchih-mao

TITLE: Study of long-period variations in electrical properties of germanium surfaces

PERIODICAL: Fizika tverdogo tela, v. 4, no. 4, 1962, 833 - 845

TEXT: A method of studying surface-sensitive effects in semiconductors is presented. The basic idea is to examine the long-period relaxation of conductivity and work function in the case of adsorption. A specific feature of this method is that not one but two quantities characterizing the surface space charge are to be determined by experiment, namely, the surface conductivity and surface flexure of the bands. The results of experiments on the electrical surface properties of n-type germanium were consistent with theory. The method is therefore recommended for the quantitative investigation of catalytic reactions in gases and of the electronics of metal and semiconductor surfaces. The most important results of this work (numerous numerical data on Ge are given) have been reported at the Vsesoyuznoye soveshchaniye po poverkhnosti poluprovodnikov

Card 1/2

(All-Union Semiconductor Surface Conference), Moscow, June 5 - 6, 1961. Professor V. I. Lyashenko, I. I. Stepko, Candidate of Physics and Mathematics, and O. V. Snitko are thanked for discussions. There are 8 figures, 2 tables, and 27 references: 9 Soviet and 18 non-Soviet. The four most recent references to English-language publications read as follows: J. N. Zemel, R. F. Green. Proc. Int. Conf. Semic., Prague, 549, 1960; R. F. Green et al. Phys. Rev., 118, 967, 1960; R. F. Green. J. Phys. a. Chem. Sol. 14, 291, 1960; Amith. J. Phys. a. Chem. Sol. 14, 271, 1960; G. Dorda. Czechoslov. J. Phys., B10, 406, 1960.

ASSOCIATION: Institut poluprovodnikov AN USSR, Kiyev (Institute of Semiconductors, AS UkrSSR, Kiyev)

SUBMITTED: September 20, 1961

Card 2/2

L 18989-63 EWT(1)/EWP(q)/EWT(m)/BDS AFFTC/ASD/ESD-3/IJP(C) GG/JD/RH/
JG

ACCESSION NR: AT3002449 S/2935/62/000/000/0147/0164 71
66

AUTHOR: Litovchenko, V. G.; Lyashenko, V. I.; Frolov, O. S.

TITLE: Investigation of electrophysical properties of a germanium surface (Report at the Conference on Surface Properties of Semiconductors, Institute of Electrochemistry, AN SSSR, Moscow, 5-6 June 1961)

SOURCE: Poverkhnostnyye svoystva poluprovodnikov. Moscow, Izd-vo AN SSSR, 1962, 147-164

TOPIC TAGS: germanium, germanium surface characteristics

ABSTRACT: Experimental results are reported of an investigation of the surface electronic structure by means of adsorption of various molecules and by means of field effect. The main results were obtained from studies of slowly relaxing field effect and adsorption. Surface conductivity σ and surface potential were determined in the experiments. I. The molecule-adsorption investigation that

Card 1/3

ACCESSION NR: AT3002449

4

involved measuring the work function by the vibrating-electrode contact-potential method and measuring σ of thin Ge specimens with a 5-55 ohms.cm resistivity yielded the following results: (1) Adsorption of both polar and nonpolar molecules by Ge substantially influences the work function φ of electrons; φ also depends on the gas pressure; surfaces cleaned by heating in a vacuum and oxidized by heating in O_2 were tested. Charge per one adsorbed atom was found to be $e_s = 10^{-3} - 10^{-4}$ e. (2) The nature of adsorbed molecules, not the sign of dipole moment, determines the direction of variation of φ and σ. Water, ethyl alcohol, acetone, CO, O_2, and gas mixtures were tested. (3) Within 300-430K, the variation of φ decreases with increase in temperature (exception: O_2 atmosphere). Effective activation energies at 4 torr were measured. (4) Equilibrium values of φ and σ after Ge adsorption were reached in 10-1,000 sec, while for CuO, Cu_2O, ZnO, CdO, the time was under 1 sec. II. Ge surface investigation that involved measuring long-time σ relaxation and field-effect φ was carried out with thin n-Ge specimens of 50-ohms.cm resistivity. A constant electric field of (2-7) 10^5 v/cm was applied for 1-2 min to the specimen. Conductivity-time

L 18989-63

ACCESSION NR: AT3002449

relations were determined for several ambient media: air, argon, acetone, etc. Also determined experimentally were: a quasi-surface conductivity vs. surface band bending curve, effective carrier mobility vs. surface band bending curve, conductivity vs. contact potential curve, and time variation of the work function of a semiconductor and a metal with adsorption and desorption of acetone molecules in an argon stream. Orig. art. has: 11 figures, 2 formulas, and 1 table.

ASSOCIATION: Institut poluprovodnikov AN UkrSSR (Institute of Semiconductors, AN UkrSSR)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: PH NO REF SOV: 010 OTHER: 014

Card 3/3

NESTERENKO, B.A.; PASECHNIK, Yu.A.; SNITKO, O.V.; FROLOV, O.S.

Field effect in thin lead sulfide films. Fiz. tver. tela 5 no.11: 3199-3206 N '63. (MIRA 16:12)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

L 31050-65 EWT(l)/EWT(m)/EWP(t)/T/EEC(b)-2/EWP(b) IJP(c) JD/GG
ACCESSION NR: AP5004322 S/0185/65/010/001/0047/0054

AUTHOR: Nesterenko, B.O. (Nesterenko, B.A.); Pasichnyk, Yu. A. (Pasechnik, Yu.A.); Snitko, O.V.; Frolov, O.S.

TITLE: Investigation of the influence of an external electric field on the photoconductivity and noise of thin layers of lead sulfide

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 1, 1965, 47-54

TOPIC TAGS: lead sulfide, photoconductivity, noise voltage, dark conductivity, field effect

ABSTRACT: The authors studied the influence of surface factors (external electric field, adsorption of molecules) on the photoconductivity and low-frequency noise of thin lead-sulfide layers. Measurements were made of the dark conductivity, the stationary photoconductivity, the photoconductivity time constant, and the noise amplitude at 400 cps, on chemically and physically prepared PbS layers, as functions of the external electric field, the surrounding gas atmosphere, and low-temperature heating. The test set-up for the conductivity noise amplitude is illustrated in Fig. 1 of the Enclosure. The bulk of the measurements were made in

Card 1/4

L 31050-65

ACCESSION NR: AP5004322

vacuum (1 x 10^{-6} mm Hg) and in dry air. The results have shown that physically and chemically deposited layers behave differently. Chemical layers had a conductivity relaxation that decreased with time following application of an external electric field, and exhibited appreciable influence of the external field on the photoconductivity and on the time constant. The physical layer showed a time-increasing conductivity, and no effect of the external field whatever. The dependence of the photoconductivity of chemical layers on the external field usually had a maximum which varied with the sample. It is assumed that to the left of the maximum the decrease in photoconductivity is connected with the increased rate of surface recombination, and to the right of the maximum it is possibly due to a decrease in the effective mobility. Tests have shown that there is no difference in the properties of the external surface of chemical layers and the surface in contact with the substrate. An external electric field and the surrounding gas atmosphere exerts a noticeable influence on the noise amplitude at 400 cycles. The surrounding gas and heating to 100C affect strongly the electrical parameters of chemical layers, with the most noticeable change taking place in the dark conductivity, which decreases in vacuum and also after heating in dry air. Some of the results are interpreted in light of earlier investigations by the authors.de-

Card 2/4

L 31050-65

ACCESSION NR: AP5004322

voted to the effect of the field on the dark conductivity (FTT v. 5, 3199, 1963). Orig. art. has: 7 figures, and 1 table.

ASSOCIATION: Instytut napivprovidnykiv AN UkrSSR,Kiev (Institute of Semiconductors, AN UkrSSR)

SUBMITTED: 15May64 ENCL: 01 SUB CODE: EM,SS,OP

NR REF SOV: 004 OTHER: 010

Card 3/4

L 31050-65

ACCESSSION NR: AP5004322

ENCLOSURE: 01

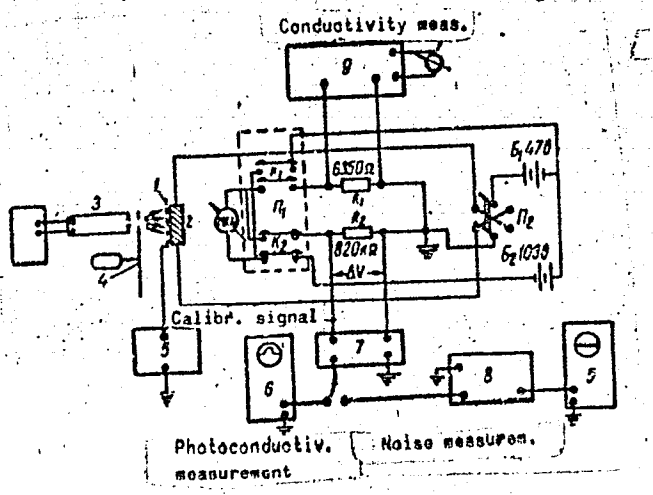


Fig. 1. Circuit for measurement of dark conductivity, photoconductivity, and noise amplitude.

1 - Transparent electrode, 2 - PbS sample, 3 - light source, 4 - motor with disc, 5 - high-voltage rectifier, 6 - oscillograph, 7 - cathode follower, 8 - amplifier, 9 - potentiometer

Card 4/4

L 9584-66 EWT(1)/T/EWA(c) IJP(c) AT
ACC NR: AP6002026 SOURCE CODE: UR/0185/65/010/012/1334/1340

AUTHOR: Lytovchenko, V. H. -- Litovchenko, V. G.; Lyashenko, V. I.; Frolov, O. S.

ORG: Institute of Semiconductors, AN UkrSSR, Kiev (Instytut napivprovidnykiv AN UkrSSR)

TITLE: Determination of the surface potential on semiconductors within a wide range of resistivities

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 12, 1965, 1334-1340

TOPIC TAGS: electric potential, electrode potential, semiconductor conductivity, Fermi level, semiconducting material

ABSTRACT: A method proposed for determining the surface potential Y is applicable to both high-resistance and very low-resistance semiconductors. The method is based on comparison of the contact potentials (determined with respect to a stable metal electrode) of a specimen with known Y_0 and a specimen with known Y_x. To determine the surface potential, it is necessary to compute the position of the volumetric Fermi level for both specimens. To check the validity of this method, Y was measured for two different materials. The measurements were made on the (111) surfaces of p-type specimens of high-resistance germanium (40 ohm·cm) and silicon (100 ohm·cm). On the basis of the data obtained it can be concluded that by measuring the work function, or by using data already available, it is possible to determine the surface

Card 1/2

L 9584-66

ACC NR: AP6002026

potential for a wide variety of high- and low-resistance semiconductors. Orig. art. has: 3 formulas and 4 figures. [JA]

SUB CODE: 20/ SUBM DATE: 16Jan65/ ORIG REF: 004/ OTH REF: 006/ ATD PRESS: 4162

Card 2/2

LITOVCHENKO, V.G. [Lytovchenko, V.H.]; LYASHENKO, V.I.; FROLOV, O.S.

Method for determining the surface potential of semiconductors within a wide range of resistivities. Ukr.fiz.zhur. 10 no.12: 1334-1340 D '65. (MIRA 19:1)

1. Institut poluprovodnikov AN UkrSSR, Kiyev. Submitted January 16, 1965.

ACC NR: AP7002665 SOURCE CODE: UR/0109/67/012/001/0076/0086

AUTHOR: Litovchenko, V. G., Frolov, O. S., Vengris, S. A., Serba, A. A. Sadovnichiy, A. A.

ORG: none

TITLE: Photoelectric characteristics of the capacitance of a surface charge varicap

SOURCE: Radiotekhnika i elektronika, v. 12, no. 1, 1967, 76-86

TOPIC TAGS: varactor diode, silicon semiconductor, photoelectric property

ABSTRACT: The photoelectric properties of the spacecharge capacitance of metal-oxide-silicon (MOS) varicaps were studied. The varactors were made from rectangular high-resistance (5×10^1 — 5×10^2 ohms/cm) photosensitive silicon chips (dimensions, 15 x 5 x 0.5 mm). The varicap was made from one part of the chip (area of the semitransparent metallic electrode, $\sim 10^{-2}$— 1 mm^2; thickness of the oxide, $\sim 0.3\ \mu$). The other part of the chip was used for photoconductance measurements from which the level of injunction of electron-hole pairs Δn was calculated. The varicap was illuminated with a tungsten incandescent lamp; the intensity was varied with platinum filters. The capacitance of the samples was

Card 1/2 UDC: 621.383.5

ACC NR: AP7002665

measured with a resonance circuit in the 50–100-Mc frequency range at different bias voltages; the maximum amplitude of the measuring a-c signal applied to the varactor was 25 mv. Two types of varactors were studied: 1) those with low lateral resistance (the dielectric layer had $\rho_{ok} \lesssim 10^8$ ohms/cm); 2) those with high lateral resistance ($\rho_{ok} \gtrsim 10^{11}$ ohms/cm). Capacitance was found to increase with increasing light intensity and to decrease with increasing reverse bias in both cases. Capacitance was also found to decrease with increasing frequency in both types of varactor. Orig. art. has: 10 figures and 3 formulas.

SUB CODE: 09,20/ SUBM DATE: 03Aug65/ORIG REF: 004/ OTH REF: 007/

Card 2/2

BONDARENKO, V.N. [Bondarenko, V.M.]; ZHINDULIS, A.I. [Zhyndulis, A.I.]; LITOVCHENKO, V.G. [Lytovchenko, V.H.]; SNITKO, O.V.; FROLOV, O.S.

Effect of an external electric field on the work function of thin lead sulfide films. Ukr. fiz. zhur. 8 no.10:1110-1116 O '63. (MIRA 17:1)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

LITOVCHENKO, V.G.; FROLOV, O.S.; ZHINDULIS, A.I.; YAKOVKIN, V.N.

Study of slow changes in the work function and surface conductivity of Si and Ge. Radiotekh. i elektron. 9 no.6:1047-1054 Je '64. (MIRA 17:7)

L 52356-65 EWT(d) Pg-4 IJP(c)

ACCESSION NR: AP5010821 UR/0020/65/161/004/0764/0766

14
12
8

AUTHOR: Lidskiy, V. B.; Frolov, P. A.

TITLE: On the topological structure of regions of stability of a self-conjugate system of differential equations with periodic coefficients

16

SOURCE: AN SSSR. Doklady, v. 161, no. 4, 1965, 764-766

TOPIC TAGS: topological space, ordinary differential equation

ABSTRACT: A real linear system of $2k$ differential equations is considered:

$$Q(t)\frac{dy}{dt} - \left\{S(t) - \frac{1}{2}\frac{d}{dt}Q(t)\right\}y = 0, \quad (1)$$

where $Q(t)$ is a non-degenerate skew-symmetric matrix, $Q'(t) = -Q(t)$, and $S(t)$ is a symmetric matrix, $S'(t) = S(t)$ with elements which depend periodically on parameter t, $Q(t+\omega) \equiv Q(t)$, $S(t+\omega) \equiv S(t)$. The matrices of the functions $S(t)$ and $Q(t)$ are assumed to be piecewise continuous. The system is said to be stable if all of its solutions are bounded when $t \to \infty$. It is strongly stable if it is stable and all systems of the same form that are sufficiently near it have this property. The

Card 1/2

L 52356-65

ACCESSION NR: AP5010821 2

structure of the regions of stability of (1) is studied and it is proved that for $k > 1$ there exists only a finite number of classes of topologically equivalent strongly stable systems. "The authors express their acknowledgement to F. A. Berezin for his attention to this work." Orig. art. has: 20 formulas.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskiy institut (Moscow Physicotechnical Institute)

SUBMITTED: 02Nov64 ENCL: 00 SUB CODE: MA

NO REF SOV: 005 OTHER: 001

Card 2/2 mb

I 22452-66
ACC NR: AP6005001 SOURCE CODE: UR/0106/66/000/001/0067/0071

AUTHOR: Frolov, P. A.; Nikolayev, G. P.

ORG: none

TITLE: Results of an investigation of the temperature coefficient of attenuation in coaxial pairs in an MKTP-4 cable

SOURCE: Elektrosvyaz', no. 1, 1966, 67-71

TOPIC TAGS: coaxial cable, RF cable

ABSTRACT: The results are reported of measuring the temperature coefficient of attenuation of 1.2/4.8-mm coaxial pairs in a Soviet-made r-f MKTP-4 cable at frequencies between 60 kc and 10 Mc. Two lengths of the cable 734.5 and 733 m were tested in a 100-m^3 thermostat where the temperature was controlled within $\pm 1C$ around these points: +37.5, +2, 0, −20, and −30C. The experimental results are tabulated; the temperature coefficient was found to be 2.80×10^{-3} and 2.00×10^{-3} for 60 kc and 10 Mc, respectively. Remarkably close results are obtainable from a formula suggested by A. Payant (Cables et transm., 1961, no. 2). Orig. art. has: 5 figures, 6 formulas, and 2 tables.

SUB CODE: 09, 17 / SUBM DATE: 05Mar65 / ORIG REF: 007

Card 1/1

UDC: 621.315.212

ACC NR: AP6034791 SOURCE CODE: UR/0039/66/071/001/0048/0064

AUTHORS: Lidskiy, V. B. (Moscow); Frolov, P. A. (Moscow)

ORG: none

TITLE: The structure of stability domains for a self-conjugate system of differential equations with periodic coefficients

SOURCE: Matematicheskiy sbornik, v. 71, no. 1, 1966, 48-64

TOPIC TAGS: differential equation, system analysis, topology, linear system, operations research

ABSTRACT: The topological structure of stability domains of linear systems is developed. The linear systems considered are those in the form

$$Q(t)\dot{y} - \left(S(t) - \frac{1}{2}\dot{Q}(t)\right)y = 0,$$

where Q(t) is a nondegenerate oblique Hermite matrix: $Q^*(t) = -Q(t)$, S(t), a Hermite matrix: $S^*(t) = S(t)$, y is an unknown column vector of order n, and differentiation is indicated by the asterisk. The stability of this system is analyzed for both real and complex cases. It is noted that in the case of Hamiltonian systems the corresponding problem was solved by I. M. Gel'fand and V. B. Lidskiy (O strukture oblastey ustoychivosti lineynykh kanonicheskikh system differentsial'nykh uravneniy s periodicheskimi koeffatsiyentami, Uspekhi matem. nauk, X, vyp. 1 (63) (1955), 3--40),

Card 1/2 UDC: 517.9[4?].4

ACC NR: AP6034791

and complex systems having a constant Q matrix are dealt with by V. A. Yakubovich (Stroyeniye funktsional'nogo prostranstva kompleksnykh kanonicheskikh uravneniy s periodicheskimi koeffitsiyentami, DAN SSSR, 139, No. 1, 1961, 54--57). In both cases an infinite number of domains of stability was found to exist. It is shown in the current article that highly stable systems with matrices $Q(t)$, dependent on t, are distributed over a finite number of conjugating components (domains of stability) in both the real and complex cases. The authors demonstrate that, for the system to be highly stable, it is necessary and sufficient that in each proper subspace S_ρ of the monodrome matrix $Y(\omega)$ the Hermite form (If, f) be definite, where

$$Y^*(\omega)IY(\omega) = I.$$

It is also shown that, in deforming the matrix of coefficients in this system, the loss of high stability occurs only with coincidence of multipliers of different order at the unit periphery of the domain. Algebraic formulations for computing the number of domains of stability and other characteristics are given. Orig. art. has: 20 equations and 5 figures.

SUB CODE: 12/ SUBM DATE: 28May65/ ORIG REF: 007/ OTH REF: 005

Card 2/2

FROLOV, P. A. Pavel Alekseyevich PA 19T89

USSR/Telephone Lines Sep 1946
Insulators

"Particular Circuit Constants of Strung Wire Lines,"
P. A. Frolov, 3 pp

"Vestnik Svyazi - Elektro Svyaz'" No 9 (78)

Well illustrated article gives various methods of criss-crossing telephone wires so as to balance the various kinds of external interference. Also gives some type of insulators and cross-arms.

19T89

FROLOV, P. A.

R 27T100

USSR/Telephone Lines
Telephones - Apparatus

Jan 1947

"Distributing Booster Points on Trunk Lines With 12-Channel Systems," P. A. Frolov, ½ p

"Vestnik Svyazi - Elektrosvyaz'" No 1 (82)

The author discusses the problem of proper spacing of booster stations on trunk lines in order to insure good quality communications and recommends that the Ministry of Communications give serious thought to solving existing problems.

27T100

FROLOV, F. A. PA 41T9

USSR/Communications Jan 1948
Telephones - Apparatus

"Type IP-47, Locator of Breakdowns," P. A. Frolov, N. V. Luskinovich, Engineers, 2 pp

"Vest Svyazi, Elektro-Svyaz'" No 1 (94)

Briefly describes new type of damage locator developed by factories of the Ministry of Communications. Apparatus is unique, as with its assistance it is possible to accomplish effective telephone communications, particularly when wire crews are installing new lines, or overhauling old ones. Consists of four basic parts: 1) chassis, equipped with 12-volt commutator tube; 2) locator coils; 3) speaker or microphone attachment; and 4) source of power.
LC

41T9

(Pavel Alekseyevich)

AUTHORS: Fedorovich, Ye.G., Frolov, P. A. Call Nr: TK 5101.F 35

TITLE: Ways for Further Technical Progress of Means of Communication (Puti dal'neyshego tekhnicheskogo progressa sredstv svyazi) Courses in Communication Technology (Lektsii po tekhnike svyazi)

PUB.DATA: Gosudarstvennoye izdatel'stvo literatury po voprosam svyazi i radio, Moscow, 1956, 34 pages, 12,000 copies

ORIG.AGENCY: Technical Administration of the Ministry of Communcations of the USSR

EDITORS: Chief Ed: Fortushenko, A.D.; Ed: Leybov, M. K.; Tech.Ed: Sushkevich, V.I.;

PURPOSE: The preface, signed by the Technical Administration of the Ministry of Communications, USSR, states that the monograph "is in essence a summary written to assist people giving reports who are managers of administrations and communication concerns." It is presented as part

Card 1/4

Call Nr: TK 5101.F 35

Ways for Further Technical Progress of Means of Communication (Cont.)

of a lecture series on communication technology.

COVERAGE: This booklet is a brief description of the principal objectives and trends in the technical development of communication facilities in the Sixth Five-Year Plan. Mention is made of the organization in 1956 of the Central Scientific Research Institute for Telephone Technique in Leningrad (NIITS) and of the Kiyev branch of the Central Scientific Research Institute for Communications (TsNIIS). There are no bibliographic references.

TABLE OF CONTENTS

Card 2/4

Ways for Further Technical Progress of Means of Communication (Cont.)

Card 3/4